

I claim:

1. An improved self-actuating display device adapted for insertion into an existing visual display system, the improved device comprising:

5                   an image resolving plate;  
                  a back plate attached to the image resolving plate;  
                  a lenticular image plate, the lenticular image plate being positioned between the  
image resolving plate and the back plate;  
                  a motor for moving the lenticular image plate, and  
10                  at least one aligning assembly that aligns the lenticular image plate with the image  
resolving plate.

2. The improved self-actuating display device of claim 1, further comprising means for coupling the motor to the lenticular image plate.

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3. The improved self-actuating display device of claim 2, wherein a drive pin is coupled to the motor, and an opening is provided in the lenticular image plate to accommodate the drive pin, such that the means for coupling the motor to the lenticular image plate comprises the drive pin engaging the opening in the lenticular image plate.

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4. The improved self-actuating display device of claim 3, further comprising a grommet inserted within the opening in the lenticular image plate, such that the drive pin engages the grommet.

5. The improved self-actuating display device of claim 1, further comprising means for maintaining intimacy of contact between the image resolving plate and the lenticular image plate.

5 6. The improved self-actuating display device of claim 5, wherein the means for maintaining intimacy of contact between the image resolving plate and the lenticular image plate comprises an electrostatic attraction system.

7. The improved self-actuating display device of claim 6, wherein the electrostatic attraction  
10 system comprises a conductive region in intimate contact with one surface of the image resolving plate, and means for applying an electrical charge to the conductive region.

8. The improved self-actuating display device of claim 7, wherein the means for applying an electrical charge comprises a D.C. power supply electrically coupled to the conductive region.

15 9. The improved self-actuating display device of claim 1, wherein the image resolving plate comprises a lenticular lens plate.

10. The improved self-actuating display device of claim 1, wherein the image resolving plate  
20 comprises a barrier strip.

11. The improved self-actuating display device of claim 1, wherein the motor is fixedly attached to the back plate.

12. The improved self-actuating display device of claim 1, wherein the aligning assembly is fixedly attached to the back plate.

5 13. An improved self-actuating display device adapted for insertion into an existing visual display system, the improved device comprising:

means for resolving image information;

a light-transmissive back plate removably attached to the means for resolving image information;

10 means for storing image information, the means for storing image information positioned between the means for resolving image information and the back plate;

means for providing reciprocating motion of the means for storing image information with respect to the means for resolving image information; and

15 means for selection of a desired image display sequence from among a plurality of image display sequences.

14. The improved self-actuating display device of claim 13, wherein the means for resolving image information comprises a lenticular lens.

20 15. The improved self-actuating display device of claim 13, wherein the means for resolving image information comprises a barrier strip.

16. The improved self-actuating display device of claim 13, wherein the means for storing image information comprises a light-transmissive medium including interleaved image information arranged for sequential display of images upon proper alignment with means for resolving image information.

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17. The improved self-actuating display device of claim 13, wherein the light-transmissive back plate is removably attached utilizing facing regions of reclosable fastening material secured to facing perimetric regions of the means for resolving image information and the back plate.

10 18. The improved self-actuating display device of claim 17, wherein the reclosable fastening material comprises hook-and-loop fastener material.

19. The improved self-actuating display device of claim 17, wherein the reclosable fastening material comprises facing regions of hermaphroditic reclosable fastening material.

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20. The improved self-actuating display device of claim 13, wherein the back plate includes a light diffusing layer.

20 21. The improved self-actuating display device of claim 13, further comprising means for maintaining intimacy of a relationship between the means for resolving image information and the means for storing image information.

22. The improved self-actuating display device of claim 21, wherein the means for maintaining intimacy of the relationship between the means for resolving image information and the means for storing image information comprises:

a flexible envelope having exterior dimensions approximating the exterior dimensions of the means for storing image information; and

a fan disposed proximate an opening in the flexible envelope, the fan providing sufficient static pressure, absent a unique pressure-regulating device, to maintain the envelope in an inflated condition;

such that the envelope exerts sufficient pressure on the means for storing image information to provide intimacy of contact between the means for resolving image information and the means for storing image information.

23. The improved self-actuating display device of claim 13, wherein the means for providing reciprocating motion of the means for storing image information comprises an integrally constructed drive motor and adjustment mechanism supported proximate one end of the self-actuating display device.

24. The improved self-actuating display device of claim 23, wherein the integrally constructed drive motor and adjustment mechanism includes adjustment means to correct angular alignment errors, if any, between lines of image information on the means for storing image information and corresponding openings in the means for resolving image information.

25. The improved self-actuating display device of claim 13, further comprising a spring-loaded engagement means disposed distally from the integrally constructed drive motor and adjustment mechanism for providing an appropriate tension throughout the means for storing image information.

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26. The improved self-actuating display device of claim 23, wherein the integrally constructed drive motor and adjustment mechanism further includes a base plate secured to the means for resolving image information, and a transit plate in sliding contact with the base plate, with the movable plate including a drive pin contacting the means for storing image information.

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27. The improved self-actuating display device of claim 26, wherein the integrally constructed drive motor and adjustment mechanism further comprising means for introducing a time delay during reciprocation of the means for storing image information.

15 28. The improved self-actuating display device of claim 27, wherein the time delay duration is programmable.

29. The improved self-actuating display device of claim 27, wherein the integrally constructed drive motor and adjustment mechanism introduces the time delay proximate the mid-  
20 point of travel of the means for storing image information.

30. The improved self-actuating display device of claim 29, wherein the time delay comprises a dwell time during which the means for storing image information does not move with respect to the means for resolving image information.

5 31. The improved self-actuating display device of claim 26, wherein the means for selection of a desired image display sequence from among a plurality of image display sequences comprises:

an eccentric cam mechanism coupled between the base plate and a second movable plate in sliding engagement with the base plate to select an initial position of the means for storing  
10 image information with respect to the means for resolving image information; and

a locking mechanism to secure the base plate to the second movable plate after the initial position has been selected.

32. The improved self-actuating display device of claim 13, wherein the display device  
15 includes a first operating mode wherein the device is positioned in a first orientation with respect to a distant viewer, and a second operating mode wherein the device is positioned transversely to the first orientation.

33. The improved self-actuating display device of claim 32, wherein a relatively low-friction  
20 slider bar assembly is disposed along one edge of the means for storing image information, and the means for storing image information is suspended from multiple points to reduce sliding friction during display operation.